

shaft, parentheses-shaped in ventral aspect, and a pair of broader, longer ventral cylindrical processes arising at base of shaft and extending caudodorsad beyond apex of shaft, crossed antepically in caudoventral aspect. Sternal abdominal apodemes traversing one conjunctiva. Female seventh sternum with hind margin broadly and very slightly convex at middle.

Holotype male and a series of paratypes, Quevedo, Ecuador, October 24, 1955 (H. R. Yust), from cotton, in U. S. National Museum collection (Cat. No. 63036).

This species is related to *bimaculata* Ruppel and DeLong, and to *dentata* Ruppel and DeLong, judging from their illustrations of those species. It differs in having a much broader shaft and in the crossed ventral aedeagal processes.

UNDESCRIBED SPECIES OF NEMATOCEROUS DIPTERA. PART IV.

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The preceding part under this title appeared in 1953 (Bull. Brooklyn Ent. Soc., 48: 97-103). In the present report I am describing three new species of Ptychopteridae and one Blepharoceridae and am providing further notes on the remarkable Trichocerid fly *Kawasemyia imanishii* (Tokunaga).

PTYCHOPTERIDAE

Ptychoptera chalybeata n. sp.

Size small (wing of male 6 mm.); general coloration of head and thorax black with bluish reflections; femora yellow, the tips narrowly brownish black, tibiae and basitarsi obscure yellow, the tips narrowly darkened; wings whitish, the broad tip and a narrow band at cord brown; abdomen yellow, the posterior borders of the intermediate segments black, the subterminal segments uniformly blackened to form a ring.

Male: Length about 6 mm.; wing 6 mm.; antenna about 3 mm.

Mouthparts, including palpi, light yellow. Front and clypeus brownish black. Antennae moderately long; scape brown, pedicel and first flagellar segment obscure yellow, succeeding segments dark brown, cylindrical, with short verticils. Head black, with bluish reflections.

Prothorax chiefly dark brown. Mesonotum black, with steel blue reflections, most evident on the praesentum. Pleura black.

the dorsopleural region pale. Halteres with stem yellow, knob broken. Legs with all coxae and trochanters pale yellow; femora yellow, the tips narrowly but conspicuously brownish black; tibiae and basitarsi obscure yellow, the tips narrowly more darkened, remainder of tarsi black. Wings whitish, with an unusually heavy brown pattern, including the apex basad to just beyond the level of the forks, the wing tip a trifle paler; a brown band at cord, narrowed posteriorly, extending to the bend of vein *Cu*; a small postarcular spot in bases of cells *R* and *M*; cells *C* and *Sc* more yellowed than the ground; veins brownish black. Venation: *Rs* very short and straight, about twice the basal section of *R*₅; cell *R*₄ a trifle deeper than cell 2nd *M*₂.

Abdomen chiefly yellow, the posterior borders of the intermediate segments black, subterminal segments uniformly black to form a ring; hypopygium obscure yellow. Male hypopygium with the tergal lobes relatively long and narrow, their tips weakly expanded, on inner surface provided with strong retrorse setae. Dististyle small, pale, shallowly and unequally bilobed at tip, the lower lobe longer. Phallosome heavily blackened.

Habitat: Thailand.

Holotype: ♂, Huey Kao, June 14, 1953 (Manop Ruttanapradith).

Type in my collection.

The only generally similar regional species is the larger *Ptychoptera distincta* Brunetti, of the eastern Himalayas. This has the wing pattern and venation very much as in the present fly, differing in the coloration of the body and legs. The male sex of *distincta* is still unknown.

***Ptychoptera schoutedeni* n. sp.**

Mesonotum orange, the praescutum chiefly black, the cephalic fourth pale; posterior sclerites of notum black, the posterior two-thirds of the mediotergite fulvous yellow; basal palpal segments yellow; antennal scape fulvous; halteres with stem fulvous, knob infuscated; femora and tibiae obscure yellow, the tips weakly darkened; wings pale yellow, with a brown seam over cord, the wing tip paler brown; vein *R*₂ oblique, basal section of *R*₅ conspicuous; male hypopygium with the elongate lobes of the tergite terminating in slender glabrous spines; dististyle trilobed, the basal lobe small, capitate.

Male: Length about 9 mm.; wing 8 mm.; antenna about 4.8 mm.

Rostrum blackened, pale basally; palpi yellow basally, the outer

segments brownish black. Antennae relatively long, a little more than one-half the body; scape and pedicel fulvous, flagellum black, the proximal third of the first segment obscure yellow; flagellar segments elongate-cylindrical, with short verticils. Front reddish; head behind the antennal bases metallic blue.

Mesonotal praescutum chiefly black, the cephalic fourth, with the pronotum, obscure yellow; posterior sclerites of notum black, the posterior two-thirds of the mediotergite and all of the pleurotergite fulvous yellow. Pleura fulvous yellow. Halteres with stem fulvous, knob infuscated. Legs with all coxae and trochanters fulvous yellow; femora obscure yellow, the tips weakly darkened, tibiae similar with more narrowly darkened tips; tarsi yellowish brown basally, outer segments dark brown. Wings with the ground pale yellow, the prearcular and costal regions more saturated yellow; a narrow but conspicuous brown crossband at cord (presumably crossing the wing but the posterior part damaged in the unique type); wing tip darkened as far back as the level of fork of R_{4+5} ; veins brown, more yellowish brown in the brightened parts. Abundant macrotrichia in the outer cells, in R_3 occupying all but the base, in cell R_5 less than the outer half. Venation: R_s subequal in length to $r-m$, straight; basal section of R_5 conspicuous; vein R_2 oblique, as in *hopkinsi*, fully as long as R_{1+2} ; cell R_4 about two-thirds its petiole, cell M_1 about one-third this length.

Abdominal segments yellow, their posterior borders dark brown; fifth and succeeding segments dark brown, including the hypopygium and appendages. Male hypopygium with the tergite profoundly divided into two slender arms that are directed dorsad and thence caudad, broad at base, thence more narrowed, at tips suddenly produced into long straight spines, these provided with weak setae, the extreme tips glabrous. Dististyle produced into a long slender arm, near base with a second smaller branch that is slightly more than one-third as long, its tip obtuse, with conspicuous setae; at extreme base of style with a short-stemmed club, with long coarse setae. Sternal lobes in profile appearing subtriangular, the lower and outer points obtuse.

Habitat: Belgian Congo.

Holotype: Volcan Karissimbi, Nya Muzinga, January 1926 (H. Schouteden); Museum of the Belgian Congo, Tervuren.

I take great pleasure in dedicating this fly to Dr. Henri Schouteden. The species is closest to *Ptychoptera hopkinsi* Edwards, of Uganda, which agrees in the oblique vein R_2 of the wings, disagreeing in the coloration of the palpi, antennae, thorax, legs and wings. The male hypopygium of *hopkinsi* has not been described.

Ptychoptera stuckenbergi n. sp.

Anterior sclerites of mesonotum chiefly black, posterior part and the pleura yellow; wings grayish, conspicuously patterned with brown, including an irregular band along cord and broad seams over the veins beyond the cord; vein R_2 transverse; abdominal tergites black, the bases of the fourth and fifth segments obscure yellow, genital segment and ovipositor orange.

Female: Length about 9 mm.; wing 8.5 mm.

Rostrum fulvous yellow; palpi black, basal segment paler. Antennae with scape and pedicel light brown, first flagellar segment obscure yellow, succeeding segments passing into black; flagellar segments subcylindrical, longer than the verticils. Head with front fulvous; vertex and occiput polished black.

Pronotum fulvous. Mesonotal praescutum chiefly polished black, the anterior third fulvous, isolating a small black median triangle on cephalic end; scutal lobes chiefly fulvous, the median area narrowly black; scutellum fulvous, parascutella black; pronotum and pleura uniformly yellow. Halteres brownish black, only the base of stem pale. Legs with all coxae and trochanters yellow; femora obscure yellow to brownish yellow, the tips narrowly brownish black; tibiae dark brown, tarsi passing into black. Wings with the ground grayish, conspicuously patterned with dark; prearcular and costal regions light brown; a dark brown seam over cord, its margins very irregular or erose due to pale spots in the abutting cells; veins beyond cord conspicuously seamed with dark brown, leaving the centers pale, involving about the outer half of the included veins; a faint dusky suffusion over most of cell R and in the base of M ; a dusky seam along vein Cu ; veins brown. Macrotrichia of outer cells extending basad to beyond the radial fork. Venation: R_2 transverse, R_{1+2} unusually long, approximately two-thirds to three-fourths R_3 ; basal section of R_5 very short to punctiform; cell R_4 about as long as its petiole, cell $2nd M_2$ about one-third its petiole.

Abdominal tergites black, the bases of the fourth and fifth segments obscure yellow; genital segment and ovipositor orange; basal sternites chiefly darkened.

Habitat: Southern Rhodesia.

Holotype: ♀, Rhodes-Inyanga National Park, near Inyanga, January 14, 1955 (B. Stuckenberg & P. Graham); Natal Museum, Pietermaritzburg.

This interesting fly is named in honor of Dr. Brian Stuckenberg, who has added most materially to our knowledge of the Dip-

tera of South Africa. The species is quite distinct from *Ptychoptera capensis* Alexander and *P. matongoensis* Alexander, the only other known regional species of the genus, in the coloration of the thorax and wings. The irregular darkened band along the cord of the wing is very different from the condition found in the above mentioned species though similar to that of *P. ghesquierei* (Colart), of the Belgian Congo, an otherwise quite different fly.

TRICHOCERIDAE

Kawasemyia imanishii (Tokunaga)

Alfredia imanishii Tokunaga; Annot. Zool. Japon., 15: 98, pl. 14, fig. 2 (adult ♀); 1935.

Trichocera imanishii Tokunaga; Annot. Zool. Japon., 15: 468; 1936.

Trichocera imanishii Esaki et al., Icon. Insect. Japonicorum, Ed. 2: 1512, fig. 4337 (adult ♀); 1950.

Kawasemyia imanishii Alexander; Trans. Shikoku Ent. Soc., 3: 14-16, fig. (venation, ♂); 1952.

The type, a female, was taken on Mount Sasagamine, Echigo, Honshu, Japan, on March 17, 1932, by Kinji Imanishi. Later, both sexes were discovered by Eiji Kawase, also in Echigo, and not far from the type locality. In January 1955, Kintaro Baba found still further specimens at Kurokawa, Echigo. To my knowledge, the fly still is known only from the Province of Echigo.

A very distinct fly, very different from all other species in the family by the nearly wingless females and by the males having the wing shape and venation quite unlike that of any Trichocerid hitherto made known. The remaining genera in the family, including *Trichocera* Meigen (Holarctic, introduced by accident in various places in the southern hemisphere), *Diazosma* Bergroth (Holarctic), *Paracladura* Brunetti (Eastern Palaearctic, western Nearctic, Maorian, Chilean), *Nothotrichocera* Alexander (Australasian), and *Palacoptaurista* Séguy (Kerguelen Island, Indian Ocean), all have a uniform type of venation that differs but slightly in the various genera. *Kawasemyia*, on the other hand, has the wing shape and venation so different that the latter cannot be homologized with any of the above.

The figure of the male provided at the time I proposed the genus, as above cited, shows the wing shape and trichiation satisfactorily but the venation as there shown and described is evidently variable within certain limits. In the specimens now available, there are two outer forks on the wing disk, interpreted as being *R'* and

M, connected by what seems to be the *r-m* crossvein. As in the other specimen, there are no veins at all in the anal field or behind the single vein interpreted as being *Cu*. In the new material, *Sc* is present, ending beyond the level of *r-m*, *Sc*₂ only moderately retracted; no crossvein in the radial field, as in the earlier specimen; *r-m* connecting at fork of *M* but far before the fork of *Rs*. The wing veins are very pale against the milky white ground.

BLEPHAROCERIDAE

Paulianina robinsoni n. sp.

General coloration dull black, the thoracic pleura clear pale yellow; antennae, halteres and legs chiefly black; wings nearly hyaline, stigmal area narrowly blackened, veins black; abundant macrotrichia in outer wing cells; *Rs* before level of *r-m*; basal section of *M*₃₊₄ about its own length before *r-m*, not fused with *Cu*₁.

Female: Length about 4 mm.; wing 6.2 mm.

Mouthparts castaneous; palpi brownish black, 4-segmented, the segments progressively shortened. Antennae 15-segmented; scape and pedicel brown, flagellum black; flagellar segments subequal in length, gradually decreasing in diameter, covered with a delicate white pubescence. Head brownish gray; a compressed tubercle immediately behind each antenna; ocellar tubercle conspicuous.

Thoracic dorsum dull black, subnitidous, the surface sparsely pruinose, more heavily so laterally and on posterior sclerites. Pleura clear pale yellow. Halteres black, the base of stem yellowed. Legs with the coxae yellow, trochanters a little darker; remainder of legs dark brown, the bases of the fore and middle femora slightly paler; legs, especially the femora, conspicuously more slender than in *hova*. Wings nearly hyaline; stigmal area narrowly blackened; veins black, conspicuous. Abundant macrotrichia in all outer cells, especially numerous in the radial and medial fields but including the entire margin back to the anal lobe; rows of trichia in cells *R*₅, *M*₂, *M*₃ and *M*₄. Venation: *Rs* before level of *r-m*, the spur about as long as either section of *Rs*; basal section of *M*₃₊₄ about its own length before *r-m*, not fused with *Cu*₁.

Abdomen dark brown, sternites with paler posterior borders. Genitalia appearing as two compressed blades, their inner faces closely applied.

Habitat: Madagascar.

Holotype: ♀, km 57, Route Anosibe-Tananarive, February 1955 (A. Robinson); Institute Scientifique de Madagascar.

I am pleased to name this fly for the collector, Mr. Andria Robinson, Preparator at the Institute Scientifique de Madagascar, to whom, and to Dr. Renaud Paulian, I am indebted for great assistance in making known the crane-flies and some other groups of Diptera of Madagascar. The only other species of *Paulianina* known to this date is the genotype, *P. hova* Alexander, which differs evidently from the present fly in coloration and in details of wing venation.

It is of great interest to know that Paulian discovered no fewer than seven distinct types of larvae in the mountain streams of Madagascar that are referable to the subfamily Edwardsiinae and presumably to the genus *Paulianina* Alexander. The following papers bear on this subject.

Alexander, C. P. A new genus and species of net winged midge from Madagascar. Mem. Inst. Scient. Madagascar, E. I: 227-230, 1 fig.; 1952 (description of *Paulianina* and *P. hova*).

Paulian, R. Fauna des Eaux douces de Madagascar. Ibid., E, IV: 431-441, 15 figs.; 1953.

The fly herewith described may well be the species of which Paulian described the larva from material taken in the forest north of Anosibe in January 1951 (Paulian, l.c., p. 435, fig. 10).

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